

REMARKS

This application has been reviewed in light of the Office Action of the United States Patent and Trademark Office dated August 13, 2008. In the Office Action, the Examiner has required that the Applicant under 35 U.S.C. §121 and §372 elect a single invention to which the claims must be restricted.

The Examiner requires restriction to one of the following:

- I. Group I, claim(s) 1-9, drawn to an optical recording medium.
- II. Group II, claim(s) 10 and 11, drawn to a method of manufacture of an optical recording medium.
- III. Group III, claim(s) 12 and 13, drawn to a method of recording on an optical medium.

Applicant formally elects to prosecute with traverse the Group I claims, claims 1-9, drawn to an optical recording medium.

In the Office Action, the Examiner cites the international search report for allegedly showing that all of the shared special technical features for claims 1-13 were known in the art in JP 2001-279245. The Examiner asserts that since the special technical features of Applicant's invention, taken as a whole, do not provide a contribution over the prior art, the invention lacks unity.

In response, Applicant submits that JP 2001-279245 does not show all of the shared special technical features for claims 1-13 and that Applicant's invention, taken as a whole, does provide a contribution over the prior art. Hence, it is respectfully submitted that the invention does not lack unity. Accordingly, Applicant traverses the restriction requirement.

Upon reviewing JP 2001-279245, it is submitted that JP 2001-279245 is directed to a polymer liquid crystal which has **excellent adhesion to a base material** by copolymerizing a polymerizable liquid crystal (like) compound with polymerizable

alcohol or carboxylic acid compounds having a hydroxol group which can be hydrogen bonded. *See* JP 2001-279245, Summary.

In contrast to JP 2001-279245, Applicant's invention is generally directed to an optical recording medium, which **combines stability of written and unwritten data with high writing speed and good sensitivity during writing**. It is submitted that the objective of excellent adhesion set forth in JP 2001-279245, is clearly different from an optical recording medium, which **combines stability of written and unwritten data with high writing speed and good sensitivity during writing**, as taught in Applicant's invention.

Applicant wishes to note that the teachings of JP 2001-279245 are well known and in fact are disclosed in substantially the same manner in the background of Applicant's specification. Specifically, the background discloses a number of prior art approaches, one of which is directed to the use of **a dilute anisotropic liquid crystal polymer network in the presence of a second type of liquid crystal molecules**. The specification states, **"In the field of liquid crystal displays it is known to use a dilute anisotropic liquid crystal polymer network. The anisotropic LC polymer network itself is then typically made of cross-linked liquid crystal molecules in the presence of an abundant second type of liquid crystal molecules."** Applicant submits that the disclosure at page 2 of Applicant's specification recites similar, if not identical subject matter to that taught in JP 2001-279245, namely, a polymer liquid crystal which has excellent adhesion to a base material by **copolymerizing a polymerizable liquid crystal (like) compound with polymerizable alcohol or carboxylic acid compounds having a hydroxol group which can be hydrogen bonded**.

In contrast to JP 2001-279245, Applicant's invention teaches an optical recording medium comprising at least one liquid crystalline (LC) layer including an anisotropic aligned LC polymer network, low molecular weight molecules, **at least part of it being LC and orientable and at least part of it having functional groups for effecting hydrogen bonding**.

Applicant's specification defines the constituent parts of a system of the invention, according to one embodiment. The specification specifically states: "A system of the invention constitutes, [a.] a low molecular weight liquid crystalline material or mixture forming a continuous phase, serving as the mobile fraction, and which may preferably, but not necessarily, comprise a liquid crystalline material or mixture with a glass transition or a first or second order temperature-induced phase transition, such as a melt transition, serving as the temperature threshold below which a low mobility of the overall system is present, and above which a high mobility of the overall system is present. The mobility of the overall system will be largely determined by that of the continuous phase; [b.] preferably, a small fraction of a dissolved anisotropic (preferably fluorescent) dye or mixture of dyes, needed for the contrast generation (planar vs. homeotropic state) that is used for data storage; [c.] an aligned liquid crystalline network, acting as the driving force for the temperature-induced or orientation of the mobile phase; [d.] a hydrogen bond-based material or mixture, that (i) will lower the viscosity of the system at elevated temperature (e.g. 200.degree. C.), (ii) will preserve or re-instate the temperature threshold of the liquid crystalline material or mixture with e.g. a first or second or order temperature-induced transition, due to its intrinsic steep viscosity-temperature dependence, (iii) will effect a high viscosity at ambient temperature, resulting from its intrinsic steep viscosity-temperature dependence; and [e.] optionally, isotropic or mesogenic additives such as thermal initiators, photo initiators, inhibitors, radical scavengers, chain transfer agents, stabilizers, plasticizers, surfactants, sensitizers, dopants, or combinations thereof."

It is submitted that the system features are neither taught nor disclosed in JP 2001-279245. A key distinguishing feature of the invention, in contrast to JP 2001-279245, is the recognition that **only a part of** the anisotropic aligned LC polymer network exhibit non-covalent interactions based on multiple hydrogen bonds and only **a part of the LC polymer network have functional groups for effecting hydrogen bonding**. The part of the anisotropic aligned LC polymer network exhibiting non-covalent interactions based on multiple hydrogen bonds exhibit a strong temperature dependence, which is of

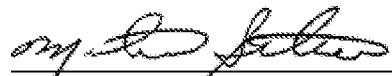
utmost importance for both single layer and multi-layer storage, as it introduces a non-linear effect for writing. The part of the anisotropic aligned LC polymer network that does not have functional groups for effecting hydrogen bonding have the ability to adopt a meta-stable state for storage of information, which is not taught or suggested in JP 2001-279245. This is not surprising given that JP 2001-279245 is directed to adhesion principles and not data storage.

Conclusion

In view of the foregoing amendments and remarks, it is respectfully submitted that all claims presently pending in the application, namely, Claims 1-13 are believed to be in condition for allowance and patentably distinguishable over the art of record.

If the Examiner should have any questions concerning this communication or feels that an interview would be helpful, the Examiner is requested to call Mike Belk, Esq., Intellectual Property Counsel, Philips Electronics North America, at 914-945-6000.

Respectfully submitted,



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